

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES**

Application No.	: 10/584,276	Confirmation No.:	4085
Applicant	: Robert Cudini		
Filed	: May 21, 2007		
Title	: MODULAR MEASURING DEVICE		
TC/A.U.	: 4176		
Examiner	: A. T. Devito		
Docket No.	: CUDI3001/FJD		
Customer No.	: 23364		

**BRIEF ON APPEAL**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA. 22202-3514

Sir:

**INTRODUCTORY COMMENTS**

Pursuant to the provisions of 37 CFR 41.37, submitted herewith is Applicant/Appellant's Brief on Appeal along with the required fee.

Any additional fees necessary for this appeal may be charged to the undersigned's Deposit Account No. 02-0200.

**REAL PARTY IN INTEREST**

(37 CFR 41.37(c)(1)(i))

The real party in interest is Applicant/Appellant's assignee, Endress + Hauser Flowtec AG, of Kagenstrasse 7, Reinach, Switzerland CH - 4153. The assignment was recorded on May 21, 2007 at Reel 019398 and Frame 0280.

**RELATED APPEALS AND INTERFERENCES**

(37 CFR 41.37(c)(1)(ii))

There are no related appeals or interferences with respect to the invention

defined in this application.

### **STATUS OF CLAIMS**

(37 CFR 41.37(c)(1)(iii))

Claims 1 - 15 have been cancelled.

Claims 16 - 31 have been finally rejected, and as such are the subject claims on appeal in this appeal proceeding.

### **STATUS OF AMENDMENTS**

(37 CFR 41.37(c)(1)(iv))

A REQUEST FOR RECONSIDERATION without amendment was filed on August 31, 2009 against the final rejection of July 2, 2009.

An Advisory Action was issued on September 17, 2009 in which the examiner maintained the final rejection of claims 16 - 31.

A NOTICE OF APPEAL was then filed on November 2, 2009.

### **SUMMARY OF CLAIMED SUBJECT MATTER**

(37 CFR 41.37 (c)(1)(v))

(References are to page and line of the specification)

The invention on appeal relates to a modular measuring device (pg. 1, line 3). Included in the modular measuring device is a sensor module and an electronics module (pg. 1, lines 4 and 5). The electronics module frequently requires replacement of, for example, circuit boards. This replacement requires space since the measuring devices because of the limited space available in those applications in which the measuring device is used (pg 2, lines 20 - 29).

An object of the invention is to provide a measuring device, in which possible repair or exchange of the measuring device electronics can be performed simply and rapidly (pg. 3, lines 10 - 12).

The invention achieves this object by, according to one embodiment, first and second connecting elements , with the first connecting element mounted on the electronics module and the second connecting element mounted to the sensor module (pg. 3, lines 23 - 26). The sensor module and the electronics module are releasably, mechanically connected together, accompanied by the formation of a connecting compartment lying between a sensor compartment and an electronics compartment (pg. 3, lines 27 - 30). The two connecting elements are electrically connected together and accommodated in a connecting compartment formed between the sensor compartment and the electronics compartment. (Pg 4, lines 6 - 8).

In Fig. 1, we see the sensor module 5 having a sensor compartment and an electronics module 13 having an electronics compartment. In the sensor compartment is located a physical-to-electric sensor, and in the electronics compartment is located measuring device electronics. (Fig. 1, and pg. 8, lines 26 - 30). Fig. 3 shows the two connecting elements 19 and 20. The two connecting elements 19 and 20 are electrically, especially galvanically, connected together, so that the measuring device electronics and the sensor are electrically coupled together, with the two mutually connected, connecting elements, connecting elements being accommodated in the connecting compartment 17 formed between the sensor and the electronics compartments. (Fig. 3 and pg. 9, lines 15 - 20).

A side wall of one of the connecting elements has an essentially straight groove 41 and a side wall of the connecting compartment has an essentially an essentially straight projection 42, with the projection being received in the groove.(pg. 10, lines 24 - 30). Alternatively, the groove and projection can be reversed with the connecting elements defining the projection.

As noted above, claims 16 - 31 are on appeal. Of these claims, claim 16 is in independent form, while claims 17 - 31 are in dependent form. Claim 16 will, therefore, be reproduced below with annotations, which are illustrative of a

preferred embodiment but not limited to the preferred embodiment.

Claim 16, A modular measuring device **(pg. 1, line 3)**, comprising:

a sensor module having a sensor compartment, in which a physical - to-electrical sensor is arranged: **(pg. 3, lines 17 - 19)**

an electronics module, having an electronics compartment, in which a measuring device electronics is arranged; **(pg. 3, lines 20 - 22)**

a first connecting element mounted on said electronics module and electrically connected with said measuring device electronics; **(pg. 3, lines 23 - 24)**; and

a second connecting element mounted on said sensor module and electrically connected with said sensor; **(pg 3, lines 25 - 26)** wherein:

said sensor module and said electronics module are releasably, mechanically connected together, accompanied by the formation of a connecting compartment lying between said sensor compartment and said electronics compartment; **(pg. 3, lines 27 - 30)**

said two connecting elements are electrically, connected together, so that said measuring device electronics and said sensor are electrically coupled together; **(pg. 4, lines 3 - 5)** and

said two connecting elements, connected together, are accommodated in the connecting compartment formed between said sensor compartment and said electronics compartment; **(pg. 4, lines 6 - 8)**

at least one side wall of at least one of said two connecting elements includes at least one essentially straight groove and at least one side wall of said connecting compartment includes at least one, essentially straight projection corresponding with said groove of said connecting element ; and the projection of said connecting compartment is received by said groove of said connecting element; **(pg. 4, lines 21 - 27)** and/or

at least one side wall of at least one of said two connecting elements includes at least one essentially straight projection and at least one side wall of

said connecting compartment includes an essentially straight groove corresponding with the projection of said connecting element, and the projection of said connecting element is received by the groove of said connecting compartment (pg. 4, lines 13 - 19).

## **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

(37 CFR 41.37(c)(1)(vi))

The rejection to be reviewed on appeal is the final rejection of claims 16 - 31 under 35 USC 103(a) over Dreyer in view of Frick

## **ARGUMENT**

(37 CFR 41.37(c)(1)(vii))

The invention as defined in claims 16 - 31 are directed to a modular design of a measuring device. A modular design is one that includes parts created separately and then combined in a larger assembly. They are complete and identifiable in their completeness. Nothing is added, nor do they require any structure in order to be usable. This is Applicant/Appellant's intended understanding of "modular." Claim expressions must be given their intended meaning unless the intended meaning is in conflict with the ordinarily understood meaning, *In re Zletz*, 13 USPQ2d 1320 (Fed. Cir. 1989). It is respectfully submitted that the meaning intended by Applicant/Appellee is **not** in conflict with the generally understood meaning.

In the Advisory Action of September 17, 2009, the examiner stated in his commentary on item 11, that "Dreyer recites in column 2.....'Another advantage of the sensor of the present invention is that it is modular'." This statement does exist in Dreyer. Nevertheless, the intent of modular in Dreyer and in the present invention is not the same. In Dreyer, column 2 it is also stated that "The electronics and sensor

“The electronics and sensor element ....are only linked via the connection element.” The connection element is described in column 3, lines 40 et seq, as an element 19 “for the **electrical** connection of the sensor element 7 to the electronics 16.” (emphasis added) Dreyer cannot be modular in the sense of the present invention, if the connection is through electrical wires and not structural parts, as is the case with the present invention

The examiner suggests that element 2 of Dreyer corresponds to a “sensor module.” Dreyer refers to element 2 as a “sensor.” He never refers to sensor 2 as a module. Can it be a module? **Emphatically no**, because it refers to an assembly and not to part of an assembly. If element 2 is a module, then what comprises the assembly? There is no assembly apart from 2, and therefore, 2 cannot be a module. Moreover, the sensor element 7 of Dreyer is not modular because it is not self contained. That is , the sensor element 7 in Dreyer must first be mounted in the casing 8 to be complete, and casing 8 is part of the flange 1 on which the electronics casing 14 is also mounted. If the flange 1 serves as mounting means for both the sensor element 7 and the electronics, then they cannot be modular since they are not complete units. They have no identity apart from their identity in assembly. They are, therefore, not modular.

The examiner suggests that Frick discloses a straight groove, presumably element 107. But element 107 is a thread not a groove, as groove is understood. And it is not straight, it is circular. In the noted Advisory Action, the examiner also states that “the examiner finds it reasonable to use the common mathematical definition of a straight line....” But a circular line is not a straight line as a geometrical concept. Elements 107 and 109 of Frick are in reality nothing more than a threaded connection. The examiner is taking liberties with the Dreyer and Frick references which are not justified by any reasonable use of the language in the claims on appeal and as found in the references. The connecting elements claimed in claim 16 do not comprise a threaded connection, and to resort to a threaded connection to suggest that patentability is lacking in claim 16 is, it is respectfully submitted, stretching the understanding of a threaded connection too far. This is not what the standard of review

in the USPTO in the examination process envisions. Admittedly, the examination of claims in the USPTO should be given their broadest meaning, but even here the broadest meaning must be "reasonable," *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983).

## CONCLUSION

In view of the above, it is respectfully submitted that claims 16 - 31 should be allowed over the references of record and those applied.

Date: December 31, 2009

Respectfully submitted

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APPENDIX OF CLAIMS  
(37 CFR 41.37 (c)(1)(viii))



## **CLAIM STATUS:**

Claims 1 - 15 (Cancelled).

16. A modular measuring device, comprising:
- a sensor module having a sensor compartment, in which a physical-to-electrical sensor is arranged;
  - an electronics module, having an electronics compartment, in which a measuring device electronics is arranged;
  - a first connecting element mounted on said electronics module and electrically connected with said measuring device electronics; and
  - a second connecting element mounted on said sensor module and electrically connected with said sensor;
- wherein:
- said sensor module and said electronics module are releasably, mechanically connected together, accompanied by the formation of a connecting compartment lying between said sensor compartment and said electronics compartment;
  - said two connecting elements are electrically, connected together, so that said measuring device electronics and said sensor are electrically coupled together; and
  - said two connecting elements, connected together, are accommodated in the connecting compartment formed between said sensor compartment and said electronics compartment;
  - at least one side wall of at least one of said two connecting elements includes at least one essentially straight groove and at least one side wall of said connecting compartment includes at least one, essentially straight projection corresponding with said groove of said connecting element; and the projection of said connecting compartment is received by said groove of said connecting element; and/or

at least one side wall of at least one of said two connecting elements includes at least one essentially straight projection and at least one side wall of said connecting compartment includes an essentially straight groove corresponding with the projection of said connecting element; and the projection of said connecting element is received by the groove of said connecting compartment.

17. The measuring device as claimed in claim 16, wherein:  
at least one of said two connecting elements is movably mounted.

18. The measuring device as claimed in claim 16, wherein:  
said two connecting elements are galvanically connected together.

19. The measuring device as claimed in claim 16, wherein:  
the connecting compartment is sealed fluid-tightly and/or pressure-tightly,  
relative to a surrounding atmosphere.

20. The measuring device as claimed in claim 16, wherein:  
at least one of said two connecting elements has electrically conductive,  
plug elements directed essentially in parallel with one another; and  
the other of said two connecting elements has electrically conductive,  
socket elements directed essentially in parallel with one another and  
corresponding to said plug elements;

said plug elements are inserted into said socket elements and so contact  
said socket elements, that said sensor and said measuring device electronics are  
electrically connected together; and

said plug elements and said socket elements are directed essentially in  
parallel with said at least one groove of said connecting compartment and/or with  
the at least one projection of said connecting compartment.

21. The measuring device as claimed in claim 20, wherein:  
both said plug elements and said socket elements protrude into said connecting compartment.

22. The measuring device as claimed in claim 20, wherein:  
at least one of said plug elements and/or at least one of said socket elements is mounted laterally and/or rotatably movably within said connecting element of which it is a part.

23. The measuring device as claimed in claim 18, wherein:  
for preventing an erroneous assembly of said sensor module and said electronics module, the at least one projection of said connecting compartment and said connecting element groove corresponding with such are so arranged, that an installed position of said sensor module relative to said electronics module is uniquely determined.

24. The measuring device as claimed in claim 18, wherein:  
for preventing an erroneous assembly of said sensor module and said electronics module, the at least one groove of said connecting compartment and said connecting element projection corresponding with such are so arranged, that an installed position of said sensor module relative to said electronics module is uniquely determined.

25. The measuring device as claimed in claim 16, further comprising:  
an essentially ring-shaped seal, which is so arranged in said connecting compartment, that it laterally surrounds at least one of said two connecting elements and contacts with an external side at least one side wall of said connecting compartment.

26. The measuring device as claimed in claim 25, wherein:

said seal is arranged coaxially, with the surrounded connecting element.

27. The measuring device as claimed in claim 25, wherein:

said seal is arranged within said connecting compartment in the region of a peripheral gap in the side wall of said connecting compartment, and lying between said connecting element and side wall of said connecting compartment.

28. The measuring device as claimed in claim 25, wherein:

said seal has on its outside, contacting the side wall of said connecting compartment, two sealing lips extending essentially in parallel with one another.

29. The measuring device as claimed in claim 27, wherein:

said seal is so arranged in said connecting compartment that the two sealing lips extend essentially in parallel with said gap in the side wall of said connecting compartment.

30. The measuring device as claimed in claim 29, wherein:

said seal is so arranged in said connecting compartment that said gap in the side wall of said connecting compartment extends essentially between the sealing lips of the seal.

31. The measuring device as claimed in claim 26, wherein:

said seal is arranged concentrically with the surrounded connecting element.

## EVIDENCE APPENDIX

There is no evidence being relied upon which was submitted pursuant to 37 CFR 1.130, 1.131 or 1.132. Included, however, are the definitions submitted with the REQUEST FOR RECONSIDERATION filed August 31, 2009

# Modular design

From Wikipedia, the free encyclopedia

In systems engineering, **modular design** — or "modularity in design" — is an approach that subdivides a system into smaller parts (modules) that can be independently created and then used in different systems to drive multiple functionalities. Besides reduction in cost (due to lesser customization, and less learning time), and flexibility in design, modularity offers other benefits such as augmentation (adding new solution by merely plugging in a new module), and exclusion. Examples of modular systems are cars, computers and high rise buildings. Earlier examples include looms, railroad signaling systems, telephone exchanges, pipe organs and electric power distribution systems. Computers use modularity to overcome changing customer demands and to make the manufacturing process more adaptive to change (see modular programming).<sup>[1]</sup> Modular design is an attempt to combine the advantages of standardization (high volume normally equals low manufacturing costs) with those of customization.

A simple example of modular design in cars is the fact that, while many cars come as a basic model, paying extra will allow for "snap in" upgrades such as a more powerful engine or seasonal tyres; these do not require any change to other units of the car such as the chassis, steering or exhaust systems.

"Characterized by: (1) Functional partitioning into discrete scalable, reusable modules consisting of isolated, self-contained functional elements; (2) Rigorous use of well-defined modular interfaces, including object-oriented descriptions of module functionality; (3) Ease of change to achieve technology transparency and, to the extent possible, make use of industry standards for key interfaces."<sup>[2]</sup>

A downside to modularity (and this depends on the extent of modularity) is that modular systems are not optimized for performance. This is usually due to the cost of putting up interfaces between modules.

## Contents

- 1 Inter-modular design
- 2 See also
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## Inter-modular design

Recognizing that excessive inter-module dependencies are an indicator of poor software design, a system should be intended to be loosely coupled to avoid unnecessary dependencies. Thus, inter-modular design should be easy to work with because modules can be easily understood in isolation, and changes or extensions to functionality would be easily localized.

## See also

- Modular Function Deployment
- Modular programming
- Separation of concerns

## References

- <sup>^</sup> Baldwin and Clark, 2000
- <sup>^</sup> "Glossary (Modular Design)". Net-Centric Enterprise Solutions for Interoperability (US Government). <http://nesipublic.spawar.navy.mil/part5/releases/1.3.0/WebHelp/glossary/m.htm>. Retrieved September 2007.

## Further reading

- Erixon, O.G. and Ericsson, A., "*Controlling Design Variants*" USA: Society of Manufacturing Engineers 1999[1]ISBN 0-87263-514-7 [2]
- Clark, K.B. and Baldwin, C.Y., "*Design Rules. Vol. 1: The Power of Modularity*" Cambridge, Massachusetts: MIT Press 2000 ISBN 0262024667
- Baldwin, C.Y., Clark, K.B., "*The Option Value of Modularity in Design*" Harvard Business School, 2002 [3]
- Modularity in Design Formal Modeling & Automated Analysis
- "Modularity: upgrading to the next generation design architecture", an interview

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CIP

**side** \wid\ *adj* : including all or most merchandise (a *storewide* sale)

**story** \stôr-ed, 'stôr- \ *adj* 1 : decorated with depicting scenes from story or history (a *story* tapestry) 2 : having an interesting history : celebrated in story or history (a *storied* castle)

**storied** \stôr-eyd \ *adj* : having stories (a *two-storied* house)

**stork** \stôrk\ *n* : any of various large mostly Old World birds having a long stout bill and being related to cranes [Old English *storc*]

**stork** \stôrks-, bil\ *n* : any of several plants of the family with long beaked fruits

**storm** \stôrm\ *n* 1 a : a disturbance of the atmosphere accompanied by wind and usually by rain, hail, sleet, or thunder and lightning b : a heavy snow, or hail c : wind having a speed of 33 kilometers per hour 2 : a disturbed or agitated mind 3 : a sudden or violent commotion 4 : a sudden influx or onset 5 : a heavy discharge of ob-  
jects 6 : a tumultuous outburst (a *storm* of criticism) 7 : a violent assault on a defended position

**storm** \stôrm\ *v* 1 a : to blow with violence b : to rain, hail, or snow heavily 2 : to attack by storm (*stormed* the fort) 3 : to show violence or anger (*storming* at the delay) 4 : to rush through (the mob *stormed* through the streets)

**storm** \stôrm\ *adj* : cut off from outside communication by a storm or its effects : stopped or delayed

**storm door** \stôrm-'dôr\ *n* : an additional door placed outside an entrance for protection against severe weather

**storm petrel** \stôrm-'petr-el\ *n* : any of various small petrels; esp : a white-headed white-marked petrel frequenting the Atlantic and Mediterranean — called also *Motacilla*, *stormy petrel*

**storm** \stôrm\ *n* : a member of a private Nazi army notable for its violence, and brutality

**storm window** \stôrm-'wîndô\ *n* : a framed glass window placed outside a main window as a protection against severe weather

**storm** \stôrm\ *n* : a sudden storm sash  
**storm** \stôrm\ *adj* : storm-l-r; -est 1 : relating to, or indicative of a storm (a *stormy* sea) 2 : marked by turmoil or fury : *passionate* (a *stormy* life) — *storm-l-y* \-mâ-'l-y\ *adj* : *passionate* (a *storm-l-y* life) — *storm-l-y* \-mâ-'l-y\ *adj* : *passionate* (a *storm-l-y* life)

**story** \stôr-ey\ *n* 1 a : an account of events 2 a : a fictional narrative 3 a : a dramatic work 4 : a widely known story 5 : a legend 6 : a story or broadcast [Old French *estorie*, from Latin *historia*]

**story** \stôr-ey\ *adj* : archaic : to narrate or describe (a *story* of a scene)

**store** \stôr\ *n* 1 : a set of goods for sale 2 : a horizontal shelf or interior not necessarily with the stories within [Medieval Latin *storia*, story of a building, from Latin *storia*, from pictures adorning the building]

**story** \stôr\ *n* : a book of stories

**story** \stôr\ *n* : a collection of stories; as a : a collection of tales (as in a children's book) b : a collection of tales (as in a children's book) c : a collection of tales (as in a children's book)

**stoup** \stôp\ *n* : a large glass or a vessel for holy water at the altar [Old English *stowp*]

**stout** \stâut\ *adj* 1 : strong of character; as a : **BOLD** 1a, **BRAVE** b : firmly resolute : **STAINLESS** 2 a : physically strong : **POWERFUL** b : **STURDY** 2a, **VIGOROUS** c : sturdily constructed : **SOLID** (*stout* boots) 3 : full of energy : **ENERGETIC** 4 : bulky in body : **FAT** [Old French *estout*, of Germanic origin] — *stout-ish* \stâut-'ish\ *adj* — *stout-ly* *adv* — *stout-ness* *n*

**stout** \stâut\ *n* 1 : a heavy-bodied dark brew made with roasted malt and a relatively high percentage of hops 2 a : a fat person b : a clothing size for the large figure

**stout-en** \stâut-'n\ *vb* *stout-ened*; *stout-en-ing* \stâut-'ning-, -n-ing\ : to make or become stout

**stout-heart-ed** \stâut-'hârt-'ed\ *adj* : **BOLD** 1a, **BRAVE** — *stout-heart-ed-ly* *adv* — *stout-heart-ed-ness* *n*

**stove** \stôv\ *n* 1 : an apparatus that burns fuel or uses electricity to provide heat (as for cooking or heating) 2 : **KITCHEN** [Dutch or Low German, "heated room"]

**stove** \stôv\ *past of stove*

**stove-pipe** \stôv-'pîp\ *n* 1 : a metal pipe for carrying off smoke from a stove 2 : a tall silk hat

**stove** \stôv\ *v* : dried stalks of grain with the ears removed that are used as feed for livestock [Anglo-French *estovers* "necessary supplies", from Old French *estoveir* "to be necessary", from Latin *est opus* "there is need"]

**stow** \stô\ *v* 1 : **HOUSE** 1a, **LODGE** 2 : to put away : **STORE** 3 a : to dispose in an orderly fashion : **ARRANGE**, **PACK** b : to fill with cargo : **LOAD** 4 *slang* : to put aside : **STOP** — usually used in the phrase *stow it* 5 : to cram in (food) — usually used with *away* [Middle English *stowen* "to place", from *stowe* "place", from Old English *stôw*]

**stow-age** \stô-'ij\ *n* 1 a : an act or process of stowing b : goods stowed or to be stowed 2 a : storage capacity b : a place for storage 3 : **STORAGE** 2a

**stow-away** \stô-'â-'wâ\ *n* : one that stows away

**stow away** \stô-'â-'wâ\ *v* : to conceal oneself aboard a vehicle as a way to obtain transportation

**STP** \es-'tê-'pê\ *n* : a powerful hallucinogenic drug that is chemically related to amphetamine [from *STP*, a trademark for a motor fuel additive]

**strabismus** \strâ-'bîz-mas\ *n* : an eye disorder in which the two eyes cannot be directed to the same point because of a fault of the muscles of the eyeball [Greek *strabismos* "condition of squinting", from *strabizein* "to squint", from *strabos* "squint-eyed"] — *strabismic* \-mîk\ *adj*

**straddle** \strad-'dl\ *v* *strad-dled*; *strad-dling* \strad-'ling-, -l-ing\ 1 : to part the legs wide : stand, sit, or walk with the legs wide apart 2 : to stand, sit, or be astride of (*straddle* a horse) 3 : **SPRAWL** 3 4 : to be noncommittal : favor or seem to favor two apparently opposite sides (*straddle* an issue) [derived from *stride*] — *strad-dler* \strad-'lâr-, -l-âr\ *n*

**straddle** \strad-'dl\ *n* : the act or position of one that straddles 2 : a noncommittal or uncertain position

**strafe** \strâf\ *v* : to fire on (as troops) at close range and especially with machine guns from low-flying airplanes [German *Gott strafe England* "God punish England", slogan of the Germans in World War I] — *straf-er* *n*

**straggle** \strag-'gl\ *v* *strag-gled*; *strag-gling* \strag-'ling-, -l-ing\ 1 : to wander from a direct course or way : **ROVE**, **STRAY** 2 : to trail off from others of its kind : spread out irregularly [Middle English *straglen*] — *strag-gler* \-lâr-, -l-âr\ *n*

**straggly** \strag-'lē-, -l-ē\ *adj* *strag-gli-er*; -est : spread out or scattered irregularly (a *straggly* beard)

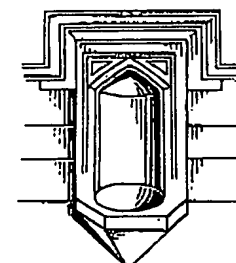
**straight** \strâit\ *adj* 1 a : free from curves, bends, angles, or irregularities (*straight* hair) (*straight* timber) b : generated by a point moving continuously in the same direction (a *straight* line) 2 : **DIRECT**, **UNINTER-  
RUPTED** : as a : lying along or holding to a direct or proper course or method (a *straight* thinker) b : **CANDID**, **FRANK** (a *straight* answer) c : coming directly

storewide—  
straight

1019



storm petrel



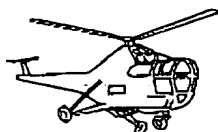
stoup 2

\ə\ abut	\ŋ\ sing
\ər\ further	\b\ bone
\ə\ mar	\s\ saw
\ə\ take	\k\ coin
\ə\ cot, cart	\t\ thin
\ə\ out	\t\ this
\ch\ chin	\f\ food
\c\ pet	\f\ foot
\ē\ easy	\y\ yet
\g\ go	\y\ few
\t\ tip	\y\ cure
\l\ life	\z\ vision
\j\ job	

# -hedral- heliotope

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- he-dral** \hē-drəl\ *adj* combining form: having (such) a surface or (such or so many) surfaces (*dihedral*) [Greek *hedra* "seat"]
- he-dron** \hē-drən\ *n* combining form, *pl* -hedrons or -he-dra \-drə\ : crystal or geometric figure having a (specified) form or number of surfaces (*rhombohedron*) [Greek *hedra* "seat"]
- hee-ble-jee-bles** \hē-bē-'jē-bēz\ *n* *pl* : JITTERS, WILLIES [coined by Billy DeBeck, died 1942, American cartoonist]
- heed** \hēd\ *vb* 1 : to pay attention 2 : to concern oneself with : MIND [Old English *bēdan*]
- heed** *n* : ATTENTION 1, NOTICE (give *heed* to my words)
- heed-ful** \hēd-fəl\ *adj* : taking heed (*heedful* of the rights of others) — **heed-ful-ly** \-fə-lē\ *adv* — **heed-ful-ness** *n*
- heed-less** \-ləs\ *adj* : not taking heed : INATTENTIVE (*heedless* of danger) — **heed-less-ly** *adv* — **heed-less-ness** *n*
- hee-haw** \hē-'hə\ *n* 1 : the bray of a donkey 2 : a loud rude laugh : GUFFAW [imitative] — **hee-haw** *vt*
- heel** \hēl\ *n* 1 a : the back part of the human foot behind the arch and below the ankle; also : the corresponding part of a lower vertebra b : the part of the palm of the hand nearest the wrist 2 a : a part (as of a shoe) that covers the human heel b : a solid attachment of a shoe or boot forming the back of the sole under the heel of the foot 3 : something resembling a heel in form, function, or position : as (1) : one of the crusty ends of a loaf of bread (2) : one of the rind ends of a cheese b (1) : the after end of a ship's keel (2) : the lower end of a mast c : the base of a tuber or cutting of a plant used for propagation d : the base of a ladder 4 : a contemptible person [Old English *hēla*] — **heeled** \hēld\ *adj* — **heel-less** \hēl-ləs\ *adj* — **on the heels of** : immediately following — **to heel** 1 : close behind 2 : into agreement or into line
- heel** *vt* 1 : to furnish with a heel 2 : to supply especially with money (a well-*heeled* customer) 3 : to follow closely (a dog *heeling* his master) — **heel-er** *n*
- heel** *vb* : to tilt or cause to tilt to one side : *tilt* (a boat *heeling* badly) [Old English *biēldan*]
- heel** *n* : a tilt to one side
- heel-and-toe** \hē-lən-'tō\ *adj* : marked by a stride in which the heel of one foot touches the ground before the toe of the other foot leaves it (a *heel-and-toe* walking race)
- heel-tap** \hēl-'təp\ *n* 1 : a lift for the heel of a shoe 2 : a small quantity of liquor remaining (as in a glass after drinking)
- heft** \heft\ *n* : physical or figurative weight [derived from *heave*]
- heft** *vt* 1 : to heave up : *hoist* 2 : to test the weight of by lifting
- hefty** \hef-tē\ *adj* *heft-i-er*, -est 1 : quite heavy 2 a : marked by bigness, bulk, and usually strength b : POWERFUL, MIGHTY c : impressively large : SUBSTANTIAL — **heft-i-ly** \-tē-lē\ *adv* — **heft-i-ness** \-tē-nəs\ *n*
- he-gem-o-n-y** \hi-'jēm-ə-nē, 'hej-ə-,mō-nē\ *n* : dominant influence or authority especially of one nation over others [Greek *hēgemonia*, from *hēgemōn* "leader", from *hēgesthai* "to lead"]
- he-gl-ra** or **he-ji-ra** \hi-'ji-rə, 'hej-ə-rə\ *n* : a journey especially when undertaken to seek refuge away from a dangerous or undesirable environment [the *Hegira*, flight of Muhammad from Mecca in A.D. 622, from Medieval Latin, from Arabic *bīḡrah*, literally, "flight"]
- heif-er** \hef-ər\ *n* : a young cow; esp : one that has not had a calf [Old English *hēahfore*]
- heigh-ho** \hi-'hō, hā-\ *interj* — used typically to express boredom, weariness, or sadness or sometimes as a cry of encouragement
- height** \hit, 'hūt\ *n* 1 a : the highest part : SUMMIT b : the highest or most advanced point or level (the *height* of suppldity) 2 a : the distance from the bottom to the top of something standing upright b : the extent of elevation above a level : ALTITUDE 3 : the condition of being tall or high 4 a : an extent of land rising to a considerable degree above the surrounding country b : a high point or position [Old English *hēhtbu*] □
- SYN** ELEVATION, ALTITUDE: HEIGHT refers to something measured vertically whether high or low (a wall 2 meters in *height*) (lettering not more than one centimeter in *height*) ELEVATION and ALTITUDE suggest reckoning of height by angular measurement or atmospheric pressure; ALTITUDE is preferable when referring to vertical distance above the surface of the earth or above sea level and ELEVATION is used especially in reference to vertical height on land (fly at an *altitude* of 10,000 meters) (Mexico City has a high *elevation*)
- height-en** \hit-n\ *vb* *height-ened*; *height-en-ing* \hit-nīng, -nīng\ 1 a : to increase the amount or degree of : AUGMENT (*heightened* the citizens' awareness) b : to make or become brighter or more intense : DEEPEN (excitement *heightened* the pinkness of their cheeks) c : to bring out more strongly : point up (*heighten* a contrast) 2 a : to raise high or higher : ELEVATE b : to raise above the ordinary or trite **SYN** see INTENSIFY
- hel-nous** \hē-nəs\ *adj* : hatefully or shockingly evil : ABOMINABLE [Middle French *hatneus*, from *haine* "hate", from *hail* "to hate", of Germanic origin] **SYN** see OUTRAGEOUS — **hel-nous-ly** *adv* — **hel-nous-ness** *n*
- heir** \ær, 'ær\ *n* 1 : a person who inherits or is entitled to inherit property 2 : a person who has legal claim to a title or a throne when the person holding it dies [Old French, from Latin *heres*] — **heir-ship** \-ship\ *n*
- heir apparent** *n*, *pl* heirs apparent : an heir who cannot legally be deprived of the right to succeed (as to a throne or a title)
- heir-ess** \ær-əs, 'ær-\ *n* : a woman who is an heir; also : one who is wealthy through inheritance
- heir-loom** \ær-'lūm, 'ær-\ *n* : a piece of personal property handed down by inheritance for several generations [Middle English *heirloom*, from *heir* + *loom* "implement"]
- heir presumptive** *n*, *pl* heirs presumptive : an heir whose present right to inherit could be lost through the birth of a nearer relative
- heist** \hist\ *vt* 1 chiefly dialect : *HOIST* 2 slang a : to commit armed robbery on b : STEAL 2a [alteration of *hoist*]
- heist** *n*, slang : armed robbery : HOLDUP; also : THEFT **heist** past of *HOLD*
- hell-** or **hello-** combining form : sun (*heliocentric*) [Greek *hēlios*]
- helic-** or **helico-** combining form : helix : spiral (*helic*) [Greek *hēlikē*, *hēlikē* "spiral"]
- hel-i-cal** \hel-i-kəl, 'hē-ll-\ *adj* : of, relating to, or having the form of a helix; also : SPIRAL 1 — **hel-i-cal-ly** \-kə-lē, -klē\ *adv*
- hel-i-con** \hel-ə-,kən, -l-kən\ *n* : a large circular brass tuba used in military bands [probably derived from Greek *hēlikē* "spiral"]
- he-li-cop-ter** \hel-ə-,kəp-tər, 'hē-lə-\ *n* : an aircraft that is supported in the air by propellers revolving on a vertical axis [French *hélicoptère*, from Greek *hēlikē* "helix" + *pteron* "wing"]
- helicopter** *vb* : to travel or transport by helicopter
- he-lo-cen-tric** \hē-lē-ō-'sen-trik\ *adj* 1 : referred to or measured from the sun's center or appearing as if seen from it (a *heliocentric* position) 2 : having or relating to the sun as a center (a *heliocentric* theory of the solar system) — compare *GEOCENTRIC*
- he-lo-graph** \hē-lē-ō-'grəf\ *n* : an apparatus for signaling by means of the sun's rays reflected from a mirror — **heliograph** *vb*
- he-lio-trope** \hē-lē-ō-'trōp\ *n* 1 : any of a genus of herbs or shrubs related to the forget-me-not — compare *GARDEN HELIOTROPE* 2 : BLOODSTONE 3 a : a mod-



helicopter

**eric purple** *n* : a moderate reddish purple [Latin *bellotropium*, from Greek *bellotropion*, from *bēlos* "sun" + *tropos* "turn"; from its flowers turning toward the sun]  
**helio-ot-ro-pism** \hē-lē-ō-trō-piz-əm\ *n* : phototropism in which sunlight is the orienting stimulus — **helio-tropic** \hē-lē-ō-trōp-ik, -trāp- \ *adj*  
**hell-port** \hēl-ə-pōrt, 'hē-lə-, -pōrt\ *n* : a landing and takeoff place for a helicopter  
**helium** \hē-lē-əm\ *n* : a light colorless nonflammable gaseous chemical element found in various natural gases — see **ELEMENT** table [New Latin, from Greek *hēlios* "sun"; from its first being observed in the sun's atmosphere]  
**helix** \hē-lik\ *n*, *pl* **helices** \hē-lə-sēz, 'hē-lə- \ *also* **helix-es** \hē-lik-səz\ 1 : something (as a wire coiled around a cylinder, a cone-shaped wire spring, or a corkscrew) spiral in form 2 : the incurved rim of the external ear 3 : a curve traced on a cylinder by a point moving at a constant angle to the straight lines parallel to the axis and lying in the surface; *also* : **SPIRAL** 1b [Latin, from Greek]  
**hell** \hēl\ *n* 1 : a nether world in which the dead are held to continue to exist : **HADES** 2 : a place or state of punishment for the wicked after death : the home of evil spirits 3 : a place or condition of misery or wickedness 4 : something that causes torment; *esp* : a severe scolding [Old English]  
**he'll** \hēl, hēl, hīl, ēl, il\ : he shall : he will  
**hell-bender** \hēl-ben-dər\ *n* : a large aquatic salamander of the Ohio valley  
**hell-bent** \-bent\ *adj* 1 : stubbornly and often recklessly determined 2 : moving at full speed  
**hell-cat** \-kat\ *n* : a violently temperamental person; *esp* : **SARNO** 2  
**hel-bore** \hē-lə-bōr, -bōr\ *n* 1 : any of a genus of herbs of the buttercup family 2 : the dried root of a hellebore formerly used in medicine 3 : a poisonous herb of the lily family; *also* : its dried root or a product of this containing alkaloids used in medicine and insecticides [Latin *helleborus*, from Greek *helleboros*]  
**Hel-lene** \hēl-ēn\ *n* : **GREEK** 1 [Greek *Hellen*] — **Hel-len-ic** \hē-lē-nik, hē- \ *adj*  
**Hel-le-nism** \hē-lə-niz-əm\ *n* 1 : devotion to or imitation of especially ancient Greek thought, customs, or styles 2 : Greek civilization 3 : a body of humanistic and classical ideals associated with ancient Greece  
**Hel-le-nist** \-nəst\ *n* 1 : a person living in Hellenistic times Greek in language, outlook, and way of life but not in ancestry; *esp* : a hellenized Jew 2 : a specialist in the language or culture of ancient Greece  
**Hel-le-nis-tic** \hē-lə-nis-tik\ *adj* 1 : of or relating to the cosmopolitan culture with blended Greek and eastern elements that followed the conquests of Alexander the Great 2 : of or relating to the Hellenists — **Hel-le-nis-ti-cal-ly** \-ti-kə-lē, -klē\ *adv*  
**hel-le-nize** \hē-lə-nīz\ *vb*, *often cap* : to make or become Greek or Hellenistic in form or culture — **hel-le-ni-za-tion** \hē-lə-nə-zā-shən\ *n*, *often cap*  
**hell-er** \hēl-ər\ *n*, *chiefly dialect* : **WILSON**  
**hell-lerl** \hēl-ər-l, -rē\ *n* : a brightly colored hybrid tropical fish [C. Heller, 20th century tropical fish collector]  
**hell-gram-mite** \hēl-grā-mīt\ *n* : the aquatic larva of a dobsonfly much used as fish bait (origin unknown)  
**hel-ilon** \hēl-yən\ *n* : a troublesome or mischievous person [probably from earlier *ballion* "scamp"]  
**hell-ish** \hēl-ɪʃ\ *adj* : of, resembling, or besetting hell : **DEVILISH** — **hell-ish-ly** *adv* — **hell-ish-ness** *n*  
**hel-lo** \hə-lō, hē- \ *n*, *pl* **hellos** : an expression or gesture of greeting — used interjectionally in greeting, in answering the telephone, or to express surprise [alteration of *hollo*]  
**helm** \hēlm\ *n* : **HELMET** 1 [Old English]  
**helm** *vt* : to cover or furnish with a helmet

**helm** *n* 1 : a lever or wheel controlling the rudder of a ship for steering; *also* : the entire apparatus for steering a ship 2 : a position of control (at the *helm* of the business) [Old English *helma*]

**hel-met** \hēl-mət\ *n* 1 : a covering or enclosing headpiece of ancient or medieval armor 2 : any of various protective head coverings usually made of a hard material to resist impact 3 : something resembling a helmet [Middle French, from *helme* "helmet", of Germanic origin] — **hel-met-like** \-līk\ *adj*

**hel-minth** \hēl-mīnth, -mīnth\ *n* : a parasitic worm; *esp* : an intestinal worm (as a tapeworm) [Greek *helminth*, *helmis*] — **hel-min-thic** \hēl-mīn-thik, -mīnt- \ *adj*

**hel-min-thi-a-sis** \hēl-mīn-thī-ə-səs\ *n* : infestation with or disease caused by parasitic worms

**hel-min-thol-o-gy** \-thāl-ə-jē\ *n* : a branch of zoology concerned with the study of parasitic worms

**helms-man** \hēlmz-mən\ *n* : the person at the helm : **STEERSMAN**

**hel-ot** \hēl-ət\ *n* 1 *cap* : a member of a class of serfs of ancient Sparta 2 : **SLAVE** 1 [Latin *Helotes*, pl., from Greek *Hellōtes*] — **hel-ot-ism** \hēl-ət-iz-əm\ *n* — **hel-ot-ry** \-ə-trē\ *n*

**help** \help, South *also* 'hep\ *vb* 1 : to give aid or assistance (*help* a child with a lesson) 2 *a* : **REMEDY**, **RELIEF** (*rest helps* a cold) *b* : to get (oneself) out of a difficulty (you must learn to *help* yourself) 3 : to further the advancement of : **PROMOTE** (*helping* industrial development with loans) 4 *a* : to change for the better (learn to live with what you can't *help*) *b* : to refrain from (couldn't *help* laughing) *c* : to keep from occurring : **PREVENT** (they couldn't *help* the accident) 5 : to serve with food or drink especially at a meal — often used with *to* 6 : to appropriate for the use of (oneself) [Old English *helpan*] — **cannot help but** : cannot but — **so help me** : on my word : believe it or not

**help** *n* 1 : an act or instance of helping : **AID**, **ASSISTANCE** (*give help*) 2 : the state of being helped : **RELIEF** (a situation beyond *help*) 3 : a person or a thing that helps (a *help* in time of trouble) 4 : a hired helper or a body of hired helpers (hire additional *help* in a business)

**help-er** \hēl-pər\ *n* : one that helps; *esp* : a relatively unskilled worker who assists a skilled worker usually by manual labor

**helper T cell** *n* : a T cell that participates in an immune response by recognizing a foreign antigen and secreting substances promoting lymphocyte proliferation, that carries molecular markers on its surface to which HIV attaches, and that is reduced to 20 percent or less of normal numbers in AIDS — called also **helper cell**

**help-ful** \hēlp-fəl\ *adj* : furnishing help (a *helpful* friend) (a *helpful* book) — **help-ful-ly** \-fə-lē\ *adv* — **help-ful-ness** *n*

**help-ing** \hēl-ping\ *n* : a portion of food : **SERVING**

**helping verb** *n* : an auxiliary verb

**help-less** \hēl-pləs\ *adj* 1 : lacking protection or support : **DEFENSELESS** 2 : lacking strength or effectiveness : **POWERLESS** (was *helpless* to prevent them from going) — **help-less-ly** *adv* — **help-less-ness** *n*

**help-mate** \hēlp-māt\ *n* : one that is a companion and helper [by folk etymology from *helpmeet*]

**help-meet** \-mēt\ *n* : **HELPMATE** [*help* + *meet*, *adj.*]

**hel-ter-skel-ter** \hēl-tər-'skel-tər\ *adv* 1 : in headlong disorder : **FULL-MELL** 2 : in random order : **HAPHAZARDLY** [perhaps from Middle English *skelten* "to come, go"]

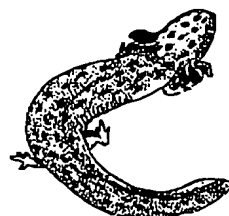
**hel-ter-skel-ter** *n* : a disorderly confusion : **TURMOIL**

**hel-ter-skel-ter** *adj* 1 : confusedly hurried : **PRECIPITATE** (*hel-ter-skel-ter* rush-hour traffic) 2 : **HIT-OR-MISS**, **HAPHAZARD** (does things in a *hel-ter-skel-ter* manner)

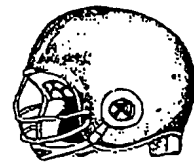
**helve** \heiv\ *n* : a handle of a tool or weapon : **HAFT** [Old English *helfe*]

## heliotropism—helve

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helibender



helmet 2

abut	sing
further	bone
mar	saw
take	coin
cot, cart	thin
our	this
chin	food
pet	foot
easy	yet
go	few
tip	care
life	vision
job	



## RELATED PROCEEDINGS APPENDIX

There is no related proceeding being relied upon.

S:\Producer\jfd\BRIEFS\Sample Brief on Appeal.wpd